paying the costs of relocation, and proposes that retuning be completed by the DTV transition date. The plan also would have completed, by July 31, 2008, the following: reprogramming of the Computer Assisted Pre-Coordination Resource and Database (CAPRAD), updating statewide and regional frequency plans and public safety licenses, and revising code-plug programming software necessary to retune the radios and systems. NPSTC also envisions that each public safety agency would submit a "Statement of Work" to Access Spectrum/Pegasus by December 31, 2007, listing the number of radios and transmit sites that will be operational by July 31, 2008, and which would be eligible for relocation funding. In an *ex parte* letter dated June 29, 2007, Motorola expressed its support for NPSTC's proposal.[730]

329. Discussion. We adopt our tentative conclusion to consolidate the narrowband segments in order to optimize the band plan for this spectrum. We find that consolidating the narrowband segments will promote the benefits of the 700 MHz Public/Private Partnership by creating a contiguous public safety broadband allocation adjacent to commercial broadband spectrum, and distancing the narrowband segment from the broadband segment to minimize interference potential. Further, consolidating the narrowband segments in this manner will maximize spectrum efficiency, thereby reducing the need for internal guard bands between narrowband and broadband operations from two separate guard bands to only one internal guard band.[731] Accordingly, we consolidate the public safety narrowband operations in the upper paired 6-megahertz blocks (twelve megahertz total) of the 700 MHz Public Safety Band.[732]

(ii) Timing of Narrowband Consolidation

330. Background. In the *700 MHz Further Notice*, we posed a number of questions in order to address how best to migrate existing narrowband operations on channels 63 and 68 to channels 64 and 69, with minimum disruption to incumbent operators.[733] As an initial matter, we sought comment on the appropriate timing of relocating narrowband operations, in view of the February 17, 2009 DTV transition deadline.[734]

331. Motorola states that the narrowband blocks were split originally so that some narrowband channels would overlap both TV channels 63/68 and 64/69, providing greater likelihood that at least a portion of the channels would be usable in additional areas of the country prior to TV clearing in early 2009. Motorola argues that maintaining the bifurcated narrowband blocks beyond that date has no benefit for public safety.[735] Alcatel-Lucent believes that there is sufficient time between the end of the auction and when the spectrum becomes available in February 2009 to enable regional and local public safety

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[730] Letter from Steve B. Sharkey, Director, Spectrum and Standards Strategy, Motorola, Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket Nos. 96-86, 06-150, 06-169, and PS Docket No. 06-229, filed June 29, 2007 (*Motorola June 2007 Ex Parte*).

[731] *See, e.g.*, AT&T *700 MHz Further Notice* Comments at 14; Alcatel-Lucent *700 MHz Further Notice* Comments at 18; M/A-COM *700 MHz Further Notice* Comments at 4; Motorola *700 MHz Further Notice* Comments at 7; TIA *700 MHz Further Notice* Comments at 3-4.

[732] As discussed elsewhere, we also are shifting downward, by 1 megahertz, the entire 700 MHz public safety band.

[733] *700 MHz Further Notice*, 22 FCC Rcd at 8158-59 ¶¶ 262, 263. This did not take into account the fact that, as a result of the band plan we adopt today, the upper 1 megahertz of narrowband operations in channels 64 and 69 also would need to be relocated as a result of the 1 megahertz downward shift of the 700 MHz public safety band.

[734] *Id.* at 8159 ¶ 263.

[735] Motorola *700 MHz Further Notice* Comments at 7 n.3. Motorola states that the Commission should define a timeline for the consolidation of the narrowband blocks, estimating that it will take twelve months from establishing the new band plan to develop the revised code plug programming software and conduct the necessary testing to ensure that the radios can be reprogrammed. *Id.* at 12.

agencies to deploy broadband technologies right away.[736]

332. Discussion. We conclude that in order to maximize the benefits of the 700 MHz Public/Private Partnership to deploy a nationwide, interoperable broadband communications network, narrowband operations presently in channels 63 and 68 (and the upper 1 megahertz of channels 64 and 69) must be cleared no later than the DTV transition date.[737] It is important that the commercial Upper 700 MHz Band D Block licensee and the Public Safety Broadband Licensee not be constrained by the presence of narrowband operations in the public safety broadband allocation with regard to implementing a build-out plan for the nationwide broadband network. Furthermore, we find that focusing the resources necessary to implement the relocation of narrowband operations during the time leading up to when the TV channels are fully cleared will enable the public safety community, as of the February 17, 2009 deadline, to devote its full attention to the important matter of deploying broadband communications capabilities with a nationwide level of interoperability.

(iii) Funding Issues

333. Background. As we recognized in the *700 MHz Further Notice*, fundamental to the accomplishment of relocating narrowband operations to the consolidated narrowband channels is a determination of the costs of the relocation and how (or by whom) the costs will be paid.[738] While we believed that the number of incumbents that would be impacted would be relatively small, we asked for estimates of the true costs associated with relocation that were as accurate as possible, as well as up-to-date information regarding how many narrowband radios are currently deployed and how many are actively being used.[739] Unfortunately, we received no information on the number of narrowband radios deployed and in use.[740] Further, only one commenter, Motorola, offered an estimate of the costs associated with reprogramming the impacted narrowband systems. Specifically, Motorola estimates that the costs associated with reprogramming installed Motorola 700 MHz equipment, including mobiles, portables and base stations that are in operation presently or targeted to be in operation by the time band reconfiguration would commence, approximately one year after the Commission finalizes a new band plan for the 700 MHz Public Safety Band, to be approximately $10 million.[741] Motorola subsequently provided additional information, in an *ex parte* letter, regarding the estimated costs for completing the reconfiguration. Specifically, Motorola states that it used as a basis for its estimate an average cost of $100 to reprogram each mobile and portable radio, and $3,000 to make necessary changes at each base transmitter site.[742]

334. We also sought comment on how best to pay for the costs of consolidating the narrowband channels. We asked whether, should we reject our tentative conclusion to impose these costs

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[736] Alcatel-Lucent *700 MHz Further Notice* Reply Comments at 8.

[737] In order to accomplish relocations in areas encumbered by existing TV operations that would continue until the DTV deadline, some relocations could be planned in advance, but not implemented, until the DTV transition date.

[738] *700 MHz Further Notice*, 22 FCC Rcd at 8159 ¶ 264.

[739] *Id.*

[740] As we explained, our licensing database shows that there are 38 narrowband licenses on channels 63 and 68 that would be subject to relocation. But, in addition, all 50 states, Puerto Rico, the U.S. Virgin Islands and the District of Columbia were granted State Licenses, which authorize use of certain narrowband channels on TV channels 63, 64, 68 and 69. State licensees are not required to file individual applications to operate on narrowband channels. Thus, we have no way of estimating how many narrowband systems, and therefore numbers of radios in use, stem from operations being conducted pursuant to the State Licenses.

[741] *See* Motorola *700 MHz Further Notice* Comments at 11.

[742] Motorola June 2007 *Ex Parte* at 2-3.

on the commercial licensee that would be part of a public/private partnership, public safety should pay for its own relocation costs, whether it might be possible to use a portion of the $1 billion Public Safety Interoperable Communications Grant Program or funding from existing grant programs, or whether we should require the licensee of the adjacent commercial broadband segment[743] or Guard Band B Block licensees to pay such costs. Alternatively, we asked whether the nationwide public safety broadband licensee should be assigned responsibility for funding the reconfiguration.[744]

335. A number of public safety groups oppose having public safety pay its own relocation costs or attempting to use the $1 billion Public Safety Interoperable Communications Grant Program.[745] On the other hand, there was extensive support in the record for imposing the payment obligation upon either the licensee of the adjacent commercial broadband segment or the Guard Band B Block licensees.[746]

336. Discussion. As we state elsewhere, we require the Upper 700 MHz Band D Block licensee to pay the costs associated with relocating public safety narrowband operations to the consolidated channels, in recognition of the significant benefits that will accrue to the D Block licensee.[747] We also assign responsibility to the Public Safety Broadband Licensee to administer the relocation process consistent with the requirements and deadlines set forth herein. To facilitate such relocation, we seek to identify the actual numbers of radios and base stations that the D Block licensee would be responsible for paying the costs of relocating. To that end, we require every 700 MHz Band public safety licensee, whether holding individual narrowband authorizations or operating pursuant to a State License, to provide the following information: (1) the total number of narrowband mobile and portable handsets in operation in channels 63 and 68, and the upper 1 megahertz of channels 64 and 69, (2) the total number of narrowband base stations serving these handsets in operation. (3) contact information for each identified set of handsets and base stations, as appropriate, (4) the areas of operation of the mobile and portable units (such as defined by the jurisdictional boundaries of the relevant public safety departments), and (5) the location, in latitude and longitude, of the base stations, all as of 30 days after the adoption date of this Second Report and Order. We require that all of this information be accurate as of 30 days after the adoption date to account for pre-programmed narrowband radios that public safety agencies may have already taken delivery as of the adoption date of this order and intend to immediately place into operation.

337. This information must be filed with the Commission on the effective date of this Second Report and Order and must include a certification, signed by an authorized party, stating that the information provided therein is true, complete, correct, and made in good faith. The Public Safety and Homeland Security Bureau will issue a public notice in advance of the effective date announcing the deadline for this certification requirement. Because obtaining this data is so integral to the success of the relocation process, we strongly caution that public safety entities failing to timely and properly file these certifications will forfeit all rights to be reimbursed for associated relocation costs. We will require the funding of the costs of relocation of narrowband operation only for handsets and base stations that are

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[743] In the *700 MHz Further Notice*, we referred to "the nationwide licensee of the commercial Upper 700 MHz spectrum block proposed by Frontline." *700 MHz Further Notice*, 22 FCC Rcd at 8159 ¶ 264. For present purposes, this reference would translate to the D Block licensee.

[744] *700 MHz Further Notice*, 22 FCC Rcd at 8160 ¶ 265. As noted elsewhere, in this Second Report and Order, we have designated this entity the Public Safety Broadband Licensee.

[745] *See, e.g.*, APCO *700 MHz Further Notice* Comments at 9; NENA *700 MHz Further Notice* Comments at 3; NPSTC *700 MHz Further Notice* Comments at 26.

[746] *See* Missouri Highway Patrol *700 MHz Further Notice* Reply Comments at 3; Motorola *700 MHz Further Notice* Comments at 8; *see also* Northrop Grumman *700 MHz Further Notice* Reply Comments at 5-6.

[747] *See supra* ¶¶ 120-121.

actually in operation as part of licensed narrowband operations in channels 63 and 68, and the upper 1 megahertz of channels 64 and 69, as of 30 days following the adoption date of this Second Report and Order.

338. In order to be clear regarding the costs that would be entitled to reimbursement, the obligation of the D Block licensee to fund the costs of relocation will be limited to the minimum costs directly associated with modifications necessary to implement the relocation of base stations, mobiles and portables, and not for any unrelated improvements. We do not impose a funding obligation to cover costs associated with any modifications that may be necessary to the CAPRAD system and other programs used by Regional Planning Committees (RPCs) to assign channels, or to any costs associated with amendments to regional plans or narrowband licenses.

339. As an additional measure to clearly define and contain the costs that would be entitled to reimbursement, we prohibit authorization, whether pursuant to individual license or State License, of any new narrowband operations in channels 63 and 68, or in the upper 1 megahertz of channels 64 and 69, as of 30 days following the adoption date of this Second Report and Order. We caution that any equipment deployed in these frequencies subsequent to 30 days following the date of adoption of this Second Report and Order will be ineligible for relocation funding. We take these steps in prohibiting new narrowband operations outside of the consolidated narrowband blocks to ensure that the relocation proceeds in an orderly manner and without complications stemming from additional operations being deployed in spectrum being reallocated. To be clear, however, public safety entities may continue to place into operation narrowband equipment in the consolidated narrowband blocks 769-775 and 799-805 MHz.

340. As stated herein, the winning bidder of the D Block license is required to commence negotiation of the NSA on the date it files its long form application or the date on which the Commission grants the public safety broadband license to the Public Safety Broadband Licensee, whichever is later (the "NSA Negotiation Commencement Date"). Further, elsewhere we require, as a pre-condition of grant of the D Block license, that the winning bidder for this license and the Public Safety Broadband Licensee complete negotiations within six months, and file a copy of the NSA that has been approved by the Commission and executed by the parties. To implement the narrowband relocation process, we require the winning bidder for the D Block license and the Public Safety Broadband Licensee jointly to submit for Commission approval a relocation plan within 30 days following the NSA Negotiation Commencement Date. We delegate authority to the Chief, Public Safety and Homeland Security Bureau, to review and approve this plan. This plan must address the process and schedule for accomplishing the narrowband relocation, including identification of equipment vendors or other consultants that would perform the necessary technical changes to handsets and base stations, and a detailed schedule for completion of the relocation process for every radio and base station identified in the certifications we require above. Furthermore, this plan must specify the total costs to be incurred for the complete relocation process.

341. As an additional means to ensure the integrity of the relocation process, we also cap the total amount that the D Block licensee must pay to cover relocation costs. Motorola's estimate is the only one in the record, and is not disputed. Motorola's $10 million estimate is based upon the anticipated numbers of portables, mobiles, and transmit sites in operation by July 2008. As we state above, however, we will limit the total relocation amount to those radios in operation as of 30 days after the adoption date of this Second Report and Order. Using the numbers of portables, mobiles, and transmit sites reported by Motorola as in operation as of the date of its June 2007 *ex parte* filing, the total cost would equal $5.77 million. While the relocation costs when limited to radios in operation as of 30 days after the adoption date of this order could be closer to $6 million, we conclude it is reasonable to set a cap of $10 million. We reach this conclusion because even though Motorola's estimate is the only one before us, it is a generous estimate in that, as the major provider of public safety 700 MHz equipment, Motorola asserts that this amount would be sufficient to cover the relocation cost of all narrowband operations through July 2008. Since we only authorize relocation reimbursement for operations as of 30 days after the adoption

date of this Second Report and Order, we find that it is reasonable to expect Motorola's estimate to be more than sufficient to cover these costs. Further, to the extent that a $10 million cap exceeds the estimate of $6 million, we find that the additional amount is not unreasonable in light of the uncertainty reflected by Motorola's admission that its estimate is "necessarily an estimate based on the best information available" and that "information available about the extent of deployed equipment and the costs of retuning is imperfect and subject to change."[748] Moreover, we find that in determining a cap, we must consider the costs associated with retuning radios manufactured by other vendors, and provide a layer of protection to the public safety community to ensure that eligible relocation costs are fully funded.

342. We emphasize that by establishing this $10 million cap, we do not expect the actual costs to reach this amount, especially because we limit reimbursement to equipment operating as of 30 days after the adoption date of this Second Report and Order. Further, we do not preclude the strong possibility that the actual costs will be lower, perhaps substantially, when based on the specific amounts for identified costs, on a per handset and per base station basis, as may be identified by the winning bidder of the D Block license in consultation with the Public Safety Broadband Licensee and equipment vendors. If the winning bidder of the D Block license and the Public Safety Broadband Licensee reach agreement on an amount less than $10 million, they shall report this amount in the relocation plan they submit, with a certification attested to by the winning bidder of the D Block license, the Public Safety Broadband Licensee, and the relevant equipment vendors, verifying that all parties will be bound by the costs so identified. We recognize that the Public Safety Broadband Licensee may incur administrative costs in carrying out its responsibilities to administer the relocation process. We find it would be premature, however, in advance of having appointed a Public Safety Broadband Licensee, to consider requiring the D Block licensee to fund such administrative costs. Further, we have no basis in the record to consider including administrative costs in the funding obligation of the D Block licensee. While we do not foreclose the possibility that the Public Safety Broadband Licensee, once appointed, may be in a position to justify a specific funding request, we emphasize that the $10 million cap we establish will remain in place and is not subject to upward adjustment for any purpose.

343. Once the total costs are identified, whether at $10 million or some lesser amount, such amount will be capped upon approval of the relocation plan by the Chief of the Public Safety and Homeland Security Bureau. By "capped" we mean that all affected parties will be bound by that amount to accomplish the complete relocation of all narrowband operations. To be clear, we will not entertain any requests to exceed the capped costs. Furthermore, as an additional precondition to grant of the D Block license, we will require, no later than the date on which the executed NSA is submitted to the Commission, that the D Block auction winner deposit the capped amount as approved by the Chief of the Public Safety and Homeland Security Bureau into a trust account established by the Public Safety Broadband Licensee, to finance the narrowband relocation costs. Thus, the winning bidder of the D Block license and the Public Safety Broadband Licensee must take great care in deciding upon the costs necessary for accomplishing the narrowband relocation. The trust account established by the Public Safety Broadband Licensee must be for the benefit of public safety licensees being relocated, and have the Public Safety Broadband Licensee acting as trustee of such account. The Public Safety Broadband Licensee may not draw on this account until the D Block license is granted to the D Block auction winner, and then may use the funds solely for relocating eligible narrowband operations consistent with the requirements and limitations set forth herein. The Public Safety Broadband Licensee will then be responsible for implementing the relocation plan, including administering payment of relocation funds to equipment vendors, and ensuring that all affected licensees are relocated in accordance with the relocation schedule contained in the relocation plan as approved by the Chief of the Public Safety and Homeland Security Bureau.

[748] Motorola July 2007 *Ex Parte* at 3.

344. The process we establish has the Public Safety Broadband Licensee disbursing the relocation funds, as opposed to the D Block licensee dealing directly with and paying each relocating narrowband licensee. We find it appropriate to have the Public Safety Broadband Licensee administer payment of relocation funds for a number of reasons. First, the D Block licensee and the Public Safety Broadband Licensee already would have reached agreement on a relocation plan, and disbursement of the funds will proceed according to this plan. In effect, as the winning bidder, the D Block licensee will have had substantial involvement in designing the relocation plan, including the disbursement of funds. Second, we find that the Public Safety Broadband Licensee is in the best position, based on the criteria we specify herein for its selection, to act in the best interests of the public safety community impacted by the narrowband consolidation. Specifically, as we require elsewhere, no commercial interest may be held in the Public Safety Broadband Licensee, this licensee must be a non-profit organization, and the licensee must be broadly representative of the public safety user community. Accordingly, in carrying out its responsibilities, the Public Safety Broadband Licensee would not be unduly influenced by financial or commercial pressures, yet would have extensive experience with public safety radio operations. Third, we require as part of the negotiation of the relocation plan that the winning bidder of the D Block license and the Public Safety Broadband Licensee reach agreement on the total costs of the entire relocation. As all parties will be bound by this amount, which we will cap, the Public Safety Broadband Licensee must carefully disburse the funds according to the relocation plan to ensure that the entire process is fully funded. Finally, creating a trust relationship further ensures that the Public Safety Broadband Licensee will act in accordance with the relocation plan and the best interests of the relocating incumbents, due to the fiduciary responsibility it would hold as trustee.

c. Regional Planning Committee Plans

345. Background. In the *700 MHz Further Notice*, we observed that RPCs had raised concerns that consolidating the narrowband channels would disrupt planning, but we noted that the costs and inconveniences of consolidating the narrowband channels are minor compared to the relative potential for accommodating future technologies.[749] Several commenters described projects that have been approved or are underway. Region 43 (Washington) states that it has engaged in a years long process and that within its Central Puget Sound region, there are approved projects in the process of implementation.[750] Similarly, Region 16 (Kansas) states that it has invested considerable time in developing its state plan and the Commission's proposed changes would require revision and resubmission of the plan to the Commission, with resultant delay in build-out of systems.[751] Region 33 (Ohio) states that Ohio has created and funded a band plan and is awaiting review by adjacent regions.[752]

346. Discussion. We recognize that our decisions to prohibit wideband operations (outside of the waiver process described elsewhere in this Second Report and Order) and to consolidate the narrowband channels will impact existing and pending RPC plans. Nevertheless, as a result, RPC plans already approved or on file with the Commission will require amendment. We find that the substantial benefits resulting from accommodating broadband communications and consolidating the narrowband channels outweigh the near-term concerns of RPCs. Indeed, the fact that the narrowband consolidation will optimize the 700 MHz public safety band plan as a whole, and promote the deployment of new technologies and broadband services, will be to the advantage of the very RPCs whose current plans will be impacted. Accordingly, we require all RPCs with approved plans or plans on file to submit amended

[749] *700 MHz Further Notice*, 22 FCC Rcd at 8158 ¶ 262.

[750] Region 43 (Washington) *700 MHz Further Notice* Comments at 3; Region 43 (Washington) *700 MHz Further Notice* Reply Comments at 2.

[751] Region 16 (Kansas) *700 MHz Further Notice* Comments at 3.

[752] Region 33 (Ohio) *700 MHz Further Notice* Comments at 1.

plans consistent with the decisions herein within 30 days of the effective date of this Second Report and Order.

d. Internal Guard Band

347. Background. In the *700 MHz Further Notice*, we tentatively concluded to separate the broadband segment and the narrowband segment with a 1-megahertz internal guard band (2 megahertz paired).[753] The purpose of the guard band is to provide a buffer to minimize interference between broadband and narrowband operations. Many commenters support establishing a one-megahertz guard band.[754] Some recommend that we allow the guard band to be used on a coordinated basis.[755] Others, like WCA, suggest that the size of the guard band be left to the discretion of the public safety broadband licensee since technology evolves over time and the guard band may be able to be reduced.[756]

348. Discussion. We adopt our tentative conclusion and agree with commenters that an internal guard band is needed between narrowband and broadband operations to minimize interference potential. Accordingly, we adopt a one-megahertz paired guard band (768-769/798-799 MHz) between the broadband and narrowband segments. At this time, we decline to adopt proposals that would permit coordinated use or leave the size of the internal guard band to the discretion of the Public Safety Broadband Licensee. We believe that certainty in the band plan is important particularly at the initial stages of the design and implementation of the public safety broadband network.[757] We include this guard band as part of the public safety broadband license, and require the Public Safety Broadband Licensee to use this guard band as a buffer between the surrounding public safety broadband and narrowband operations.

e. Border Issues

349. Background. In the *700 MHz Further Notice*, we noted that one virtue of the BOP and the Access Spectrum/Pegasus alternative proposal is its proposed shift in the spectral location of the block dedicated to public safety, which would result in an overlap of 1 megahertz of the 6-megahertz paired narrowband channels with TV channels 63 and 68, which Canada had already agreed to clear.[758] Because we tentatively concluded that we could not adopt the BOP, we sought comment on whether to temporarily allow, in border areas, narrowband voice communications within the public safety internal guard band, to account for the fact that, at the time, Canada had not yet set a DTV transition date for channels 64 and 69.[759] As discussed elsewhere, the band plan we adopt incorporates a shift of the 700 MHz Public Safety

[753] *See 700 MHz Further Notice*, 22 FCC Rcd at 8157 ¶ 257.

[754] *See, e.g.*, Ericsson *700 MHz Further Notice* Comments at 21; M/A-COM *700 MHz Further Notice* Comments at 5; NPSTC *700 MHz Further Notice* Comments at 21; Region 43 (Washington) *700 MHz Further Notice* Comments at 7; Qualcomm *700 MHz Further Notice* Comments at 15; TIA *700 MHz Further Notice* Comments at 3; Verizon Wireless *700 MHz Further Notice* Comments at 16; Alcatel-Lucent *700 MHz Further Notice* Reply Comments at 1.

[755] M/A-COM *700 MHz Further Notice* Comments at 2-3; Missouri State Highway Patrol *700 MHz Further Notice* Comments at 9.

[756] WCA *700 MHz Further Notice* Comments at 4-5; *see also* Alcatel-Lucent *700 MHz Further Notice* Comments at iii

[757] We do not foreclose the possibility of permitting the Public Safety Broadband Licensee to request that the Commission revisit the creation of the one megahertz guard band, if technology advances such that the guard band could be reduced without increasing the potential for interference.

[758] *700 MHz Further Notice*, 22 FCC Rcd at 8158 ¶ 260.

[759] *Id.* at 8158 ¶ 261. A few commenters expressed support for this use of the guard band. *See, e.g.*, Alcatel-Lucent *700 MHz Further Notice* Comments at 23-24; Frontline *700 MHz Further Notice* Comments at 55.

Band down by 1 megahertz.

350. Since we released the *700 MHz Further Notice*, Canada announced that, as of August 31, 2011, it will have completed its DTV transition, including on channels 64 and 69.[760] Thus, while Canada has now established a firm DTV transition date, it will continue to trail the U.S. DTV transition by two and a half years. Further, there remains support in the record to obtain the benefits of the downward shift for purposes of narrowband operations that would be impacted by Canadian TV operations.[761] Alcatel-Lucent states, however, that a one-megahertz shift will present interference issues as public safety broadband operations would be shifted into existing TV channels 62 and 67, which have Canadian television station operations.[762]

351. Discussion. We find that our revised band plan sufficiently addresses these issues arising at the Canadian border. By adopting a band plan that implements a shift of the 700 MHz Public Safety Band 1 megahertz lower in the 700 MHz Band, we find that narrowband operations can occur in the uppermost one megahertz of channels 63 and 68 and thus outside of channels 64 and 69 where there will be continued Canadian analog TV operations.[763] In this manner, narrowband operations can be undertaken at 769-770 and 799-800 MHz at the Canadian border without interference concerns. Also, the downward shift makes it unnecessary for us to authorize use of the public safety internal guard band to accommodate narrowband operations at the border. With respect to Alcatel-Lucent's concerns regarding the effect of Canadian broadcasters operating on TV channels 62 and 67, we believe the effect on public safety broadband operations will be very limited. As Alcatel-Lucent points out, the border area is not densely populated, and it is unlikely that maximum use of the broadband segment would be expected prior to the discontinuation of Canadian broadcasts in that spectrum.[764] On balance, we find that the benefits of the one-megahertz downward shift outweigh the limited impact on broadband operations in the border area.

352. We do not, at this time, adopt any measures specific to the potential for continued TV operations in Mexico. The comments filed on this issue do not suggest there is a pressing need to take any particular actions at the present time concerning narrowband operations in the area of the Mexican border.[765] In the meantime, the United States and Mexico continue ongoing discussions concerning

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[760] Broadcasting Public Notice CRTC 2007-53 (May 17, 2007), found at <http://www.crtc.gc.ca/archive/ENG/Notices/2007/pb2007-53.htm>.

[761] *See, e.g.*, NPSTC *700 MHz Further Notice* Comments at 25 (affirming "the virtues of the 'permanent shift' plan under Proposals 3, 4 and 5"); APCO *700 MHz Further Notice* Comments at 9-10 ("Proposal 3 in the *FNPRM* . . . offers the best approach for addressing this issue, as it allows border areas access to narrowband channels."); M/A Com *700 MHz Further Notice* Comments at 2-4 (supporting 1 megahertz downshift to accommodate operations in border areas); Upper 700 MHz Licensees *700 MHz Further Notice* Comments at 8-10 (arguing that the only way to ensure nationwide interoperability for public safety's mission-critical narrowband voice communications is adoption of a band plan that includes permanent, nationwide narrowband interoperability through shifting the public safety allocation down one MHz); California *700 MHz Further Notice* Comments at 3 (supporting Proposals 3, 4, or 5).

[762] Alcatel-Lucent *700 MHz Further Notice* Comments at 22 (presenting a map showing the presence of Canadian TV stations broadcasting on TV channels 62 and 67).

[763] *See* M/A Com *700 MHz Further Notice* Comments at 3-4; Upper 700 MHz Licensees *700 MHz Further Notice* Comments at 8-10.

[764] Alcatel-Lucent *700 MHz Further Notice* Comments at 24.

[765] Alcatel-Lucent states that along the U.S.-Mexico border, there are a number of primary assignments that affect deployment of broadband systems, but the most potentially troubling ramifications from border operations are along the Canadian boundary. Alcatel-Lucent *700 MHz Further Notice* Comments at 22 & n.46. The Upper 700 MHz Licensees state that public safety agencies located in regions along the border with Mexico would not confront (continued....)

Mexican broadcast operations at the border. Accordingly, we will take future action, if and when appropriate, to address matters concerning public safety narrowband operations near the Mexican border.

f. Technical Parameters

353. In the *700 MHz Further Notice*, we sought comment on whether it is appropriate to provide the same flexibility to 700 MHz Public Safety broadband operations as that afforded 700 MHz Commercial Services Band licensees by implementing a PSD model for defining power limits, permitting increased power in rural areas, and permitting measurement of power levels on an average, versus peak, basis. We also sought comment on whether the technical restrictions adopted for the 700 MHz Commercial Services Band with respect to interference protection, if applied to public safety broadband spectrum, will protect adjacent band operations.[766] In response, several parties filed comments addressing technical issues. Below we examine each technical issue separately.

(i) Broadband Power Limits

354. Background. Motorola states that the Commission should adopt the same PSD limits for public safety broadband as we adopted in the *700 MHz Report and Order* for the commercial, non-Guard Band licenses in the 700 MHz Band.[767] It contends, however, that the Commission should adopt stricter power flux density (PFD) limits. It argues that the PFD limits adopted for commercial services are insufficient to protect adjacent public safety narrowband operations. Motorola recommends that the Commission adopt a PFD limit of 300 uw/m^2 for operations in the public safety segment.[768] Alcatel-Lucent opposes adopting this PFD limit at this time. It argues that the Commission should wait until a more complete record is available.[769]

355. Discussion. We agree with Motorola that the public interest is served by specifying power limits in terms of PSD limits for 700 MHz public safety broadband operations. This approach to defining power limits will enable higher power signals from wider band technologies. Further, it will better accommodate all technologies (*i.e.*, it is more technologically neutral)[770] and help standardize 700 MHz broadband mobile (end user) equipment across both the commercial and public safety broadband segments in the 700 MHz Band.

356. As suggested by Motorola, we also adopt the same PSD limits specified for the commercial 700 MHz Band for operation in the 700 MHz public safety broadband segment. Accordingly, we will allow 700 MHz public safety broadband base stations employing bandwidths greater than 1 megahertz a maximum of 1kW/MHz ERP (*i.e.*, no more than 1 kW ERP in any one-

(Continued from previous page)

impairment because there are no Mexican television broadcast operations in TV Channels 62 and 67 along the border. Upper 700 MHz Licensees *700 MHz Further Notice* Reply Comments at 12 & n.3. Our own analysis confirms that there are no full power TV stations operating in Mexico along the border on TV channels 62 and 67.

[766] *700 MHz Further Notice*, 22 FCC Rcd at 8160 ¶ 267.

[767] Motorola *700 MHz Further Notice* Comments at 26; *see also* California *700 MHz Further Notice* Reply Comments at 7 (stating that it cannot comment on specific levels, but the public safety narrowband must be protected from interference).

[768] *Id.* at 27-28.

[769] Alcatel-Lucent *700 MHz Further Notice* Reply Comments at 11.

[770] Under this approach, the maximum allowable power levels are defined on a "per megahertz of spectrum bandwidth" basis, rather than on a "per emission" basis. This is helpful because with some technologies, only one emission is transmitted within a licensee's given bandwidth, while other technologies might employ multiple emissions over that same bandwidth. Establishing a power limit on a "per emission" basis could allow licensees employing a technology using multiple emissions to transmit more total energy in their given bandwidth than licensing using a technology with only one emission.

megahertz segment).[771] Stations operating with bandwidths of less than 1 megahertz will be permitted to operate at a power level up to 1 kW ERP over their bandwidth.[772]

357. For rural area[773] operations, we received no objections to permitting increased power for public safety broadband, as we had done in the *700 MHz Report and Order* with respect to commercial operations.[774] Accordingly, we will permit power levels of up to 2 kW/MHz in rural areas. Also, consistent with our decision in non-rural areas, we will allow base stations located in rural areas operating with bandwidths less than 1 megahertz to operate at power levels up to 2 kW ERP over the licensee's given bandwidth.

358. There was very little in the record concerning the issue of whether we should adopt a PFD limit for public safety broadband. We conclude that the best course of action given the limited record here is to decline to adopt a PFD limit in the public safety broadband segment. We note, however, that should additional facts be presented, we may revisit this issue in the future.

359. As we did for operations in the commercial 700 MHz Band, we specify that power must be measured in "average" rather than "peak" terms.[775] An "average" measurement technique results in a more accurate measure of the interference potential for these technologies. For the purposes of measuring "average power" we make the following determinations. First, the technique shall be made during a period of continuous transmission and be based on a measurement using one-megahertz resolution bandwidth. Second, we shall restrict the peak-to-average (PAR) ratio of the radiated signal to 13 dB. Limiting the PAR to 13 dB strikes a balance between enabling licensees to use modulation schemes with high PARs and protecting other licensees from high PAR transmissions. Parties seeking to employ the "average power" measurement technique should consult with the FCC Laboratory for guidance on the appropriate averaging method for the particular technology they plan to use.[776]

(ii) Broadband Emission Limit

360. Background. Alcatel-Lucent proposes that the Commission adopt an out-of-band emission (OOBE) limit of 76+10logP for public safety broadband operations into the 700 MHz public safety narrowband segment.[777] Ericsson argues that the more stringent OOBE limits continue to be necessary to protect public safety narrowband operations.[778]

361. Discussion. The public safety broadband segments (at 763-768 and 793-798 MHz) are bounded on the top by the one-megahertz internal guard bands, followed by the public safety narrowband segments (at 769-775 and 799-805 MHz), and on the bottom by the Upper 700 MHz Band D Block. We adopt the following out-of-band emission (OOBE) limits for public safety broadband transmissions: for base stations, which will transmit in the 763-768 MHz band, an OOBE limit of 76+10logP (dB) in a 6.25

[771] *See 700 MHz Report and Order*, 22 FCC Rcd at 8099 ¶ 92.

[772] For example, a base station transmitting a signal with a bandwidth of 200 kHz could employ a power level of 1 kW ERP over the 200 kHz bandwidth.

[773] For purposes of this Second Report and Order, "rural areas" are those counties in the United States having a population of fewer than 100 people per square mile, based on the most recently available population statistics from the Bureau of Census. *See Rural Report and Order*, 19 FCC Rcd at 19128 ¶ 89; 47 C.F.R. § 27.50(d)(1).

[774] *700 MHz Report and Order*, 22 FCC Rcd at 8099 ¶ 93.

[775] *Id.* at 8103 ¶ 105.

[776] *Id.* at 8104 ¶ 106.

[777] Alcatel-Lucent *700 MHz Further Notice* Comments at 20.

[778] Ericsson *700 MHz Further Notice* Comments at 29-30.

kHz band segment in the 769-775 and 799-805 MHz bands; and for mobile/portable stations, which will transmit in the 793-798 MHz band, an OOBE limit of 65 + 10logP in a 6.25 kHz band segment in the 769-775 and 799-805 MHz bands; We believe these limits will adequately protect public safety narrowband operations while enabling viable broadband operations. Further, these limits provide the same amount of protection previously provided to public safety narrowband operations from commercial 700 MHz transmissions,[779] and received support in the record.[780] We also note that these are the same limits we adopt elsewhere for the Upper 700 MHz Band D Block and C Block licensees with respect to the 700 MHz public safety narrowband segments.

362. Consistent with our decision elsewhere, we will not adopt an OOBE limit for public safety broadband emissions falling outside the bottom part of the band (below 763/793 MHz) with respect to the adjacent D Block spectrum. We reach this conclusion because, under the Public/Private Partnership, the Public Safety Broadband Licensee and the D Block licensee will be authorized on adjacent spectrum and will use the same infrastructure.

(iii) Broadband Interoperability Standard

363. Background. Alcatel-Lucent argues that the Commission should establish a single nationwide interoperability standard in order to facilitate interoperability.[781] Others, such as Northrop Grumman, recommend that the Commission should not establish a broadband standard now. They note that advanced 4G technologies are still in the early phase of market entry. According to Northrop Grumman, establishing a public safety broadband standard would be premature and stifle public safety's present and future access to the marketplace and commercial innovation.[782] It contends that interoperability will develop through the evolution of commercial broadband wireless and network standards. IP-based design of networks with new standardized layers now being used commercially such as IP Multimedia Subsystems (IMS), and the robust adaptability of the latest broadband wireless user equipment, with multi-band function and/or software-defined characteristics, providing imbedded interoperability.[783]

364. Discussion. We find that the development of a nationwide broadband interoperability standard is imperative. Having a common standard will lead to the development of common network and subscriber equipment, and thus enable the economies of scale we envision for the Public Safety Broadband Licensee. Furthermore, once a common standard is adopted, all public safety entities will be required to follow this standard in order to participate in the nationwide broadband network. This, in turn, will permit disparate public safety entities to interoperate with each other, anywhere in the country. Rather than having the Commission select this standard, however, we find that it would be more efficient and appropriate to require the Upper 700 MHz D Block licensee and the Public Safety Broadband Licensee to agree to a broadband standard as part of their negotiation of the NSA. The Commission will have an opportunity to pass on the standard so selected as part of its overall review, and approval, of the NSA.

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[779] *See* Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, WT Docket No. 99-168, *First Report and Order*, 15 FCC Rcd 476, 518-20 ¶¶ 103-06 (2000).

[780] *See* Alcatel-Lucent *700 MHz Further Notice* Comments at 20; Ericsson *700 MHz Further Notice Comments* at 29-30.

[781] Alcatel-Lucent *700 MHz Further Notice* Comments at 18.

[782] Northrop Grumman *700 MHz Further Notice* Reply Comments at 7-8.

[783] *Id.*

2. Public Safety Broadband Licensee

365. In light of our nation's current and anticipated public safety and homeland security needs, we proposed a comprehensive plan to promote the rapid deployment of a nationwide, interoperable, broadband public safety network, and thereby improve emergency responsiveness. This plan is based on taking "a centralized and national approach to maximize public safety access to interoperable, broadband spectrum in the 700 MHz Band."[784] Accordingly, we proposed that a single, public safety broadband licensee (Public Safety Broadband Licensee) be assigned the public safety broadband spectrum on a primary basis.[785]

366. We conclude that the public interest is best served by establishing a single nationwide Public Safety Broadband License for the 700 MHz public safety broadband spectrum. We will assign this license to a single Public Safety Broadband Licensee that will be responsible for implementing the 700 MHz public safety nationwide interoperable broadband network. This network will serve to provide public safety entities access to new broadband technologies across the country. Further, as discussed elsewhere, we provide that the Upper 700 MHz D Block Licensee will gain access to the 700 MHz public safety broadband spectrum on a secondary preemptible basis through a spectrum leasing arrangement with the Public Safety Broadband Licensee. In the paragraphs below, we discuss the rules and policies governing the Public Safety Broadband Licensee.

a. Single Nationwide Geographic Area License

367. Background. In the *700 MHz Public Safety Ninth Notice*, we sought comment on whether to license the 700 MHz public safety broadband spectrum on a nationwide basis. We recognized that licensing the entire public safety broadband spectrum to a single licensee would be a departure from the Commission's traditional practice of licensing individual state and local jurisdictions on a site-by-site basis.

368. Most commenters agree that licensing a single, national public safety entity for the provision of public safety broadband service would best achieve our goal of establishing a nationwide interoperable broadband network. For example, NPSTC states that it "has become increasingly apparent to NPSTC that deployment of a nationwide public safety broadband network is enormously important for emergency responders at all levels of government: local, state and federal."[786] APCO notes that "the public safety community has increasingly recognized the need for consolidation of communications systems and functions." APCO also notes that there are "particular advantages to having a single licensee for the national broadband network."[787] Others also support the nationwide license concept.[788] On the other hand, some oppose a national licensing approach. For example, the State of California indicates that it does not believe that the nationwide, interoperable, broadband network proposed by the

[784] *700 MHz Public Safety Ninth Notice*, 21 FCC Rcd at 14838 ¶ 3.

[785] *Id.* at 14843 ¶ 19

[786] NPSTC *700 MHz Public Safety Ninth Notice* Comments at 1.

[787] APCO *700 MHz Public Safety Ninth Notice* Comments at 5.

[788] *See, e.g.*, Ericsson *700 MHz Public Safety Ninth Notice* Comments at i; First Response Coalition *700 MHz Public Safety Ninth Notice* Comments at 3; Cisco Systems *700 MHz Public Safety Ninth Notice* Comments at iii; AT&T *700 MHz Public Safety Ninth Notice* Comments at i; Missouri State Highway Patrol *700 MHz Public Safety Ninth Notice* Comments at 4-5; Verizon Wireless*700 MHz Public Safety Ninth Notice* Comments at 4-5; WCA *700 MHz Further Notice* Comments at 9; Western Fire Chiefs Association *700 MHz Further Notice* Comments at 1; Virginia Fire Chiefs Association *700 MHz Further Notice* Comments at 2; Cyren Call *700 MHz Further Notice* Comments 2-3; Region 9 (Florida) *700 MHz Further Notice* Comments at 2; California *700 MHz Further Notice* Comments at 4.

Commission is a viable alternative.[789] Region 43 (Washington) argues that the 700 MHz spectrum should remain under control of the regional planning committees.[790] Sharp Communications contends that public safety agencies should have the ability to license, own and operate their own high-speed data systems.[791] The Metropolitan Washington Airports Authority also opposes a single national public safety broadband licensee.[792]

369. Discussion. Traditional site-by-site licensing is designed primarily to license dispatch radio systems on a transmitter-by-transmitter basis in local areas, yet is very cumbersome for radio systems comprising hundreds or thousands of sites. On the other hand, creating a single nationwide geographic area license offers greater flexibility and eases the administrative burden on both the public safety community and the Commission.[793] We find that centralizing the responsibilities for implementing a broadband network across the entire county under a nationwide geographic area license, assigned to a single entity, best serves the objectives discussed in the *700 MHz Public Safety Ninth Notice*, including the goals of achieving a nationwide level of interoperability and a public safety network that is robust, cost effective, spectrally efficient, and based on a flexible, IP-based, modern architecture.[794] These goals would be very difficult, if not impossible, to achieve under regional, state, or local level spectrum planning approaches. We thus find that the aforementioned benefits of a nationwide license outweigh the concerns expressed by some commenters.

370. In addition, a single Public Safety Broadband Licensee can achieve significant bargaining and purchasing power in acquiring equipment and services needed for the nationwide broadband system, and thus be able to obtain economies of scale with respect to network and radio equipment not unlike nationwide CMRS systems. This licensee also could increase spectrum efficiency as compared to multiple, specialized public safety network "silos" overlapping in the same area and using incompatible frequencies and technologies. Accordingly, we adopt our proposal to license the 700 MHz public safety broadband spectrum as a 10-megahertz block (comprised of paired, 5-megahertz blocks) under a nationwide geographic area license, and we will assign this license to the Public Safety Broadband Licensee.

b. Eligibility Criteria

371. Background. In the *700 MHz Public Safety Ninth Notice*, we proposed that selection of the Public Safety Broadband Licensee should be based on a number of criteria, including, but not limited

[789] California *700 MHz Public Safety Ninth Notice* Comments at 1; *see also* Region 33 (Ohio) *700 MHz Public Safety Ninth Notice* Comments at 4; Texas Interoperability *700 MHz Public Safety Ninth Notice* Comments at 4-7.

[790] Region 43 (Washington) *700 MHz Public Safety Ninth Notice* Comments at 1, 3.

[791] Sharp Communications *700 MHz Public Safety Ninth Notice* Comments at 1.

[792] Metropolitan Washington Airports Authority *700 MHz Public Safety Ninth Notice* Comments at 2; *see also* Region 22 Public Safety Regional Planning Committee *700 MHz Public Safety Ninth Notice* Comments at 1; San Francisco Department of Emergency Management *700 MHz Public Safety Ninth Notice* Comments at 6. Other commenters suggest that it is premature to create a single national network. *See, e.g.*, NATOA *700 MHz Further Notice* Reply Comments at 6-7; Spectrum Coalition for Public Safety *700 MHz Further Notice* Reply Comments at 1-6; RCC *700 MHz Further Notice* Reply Comments at 8-9.

[793] The Commission recognized similar benefits of geographic-based licensing when it adopted state licensing in the 700 MHz Band. *See* Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010, WT Docket No. 96-86, *Third Memorandum Opinion and Order and Third Report and Order*, 15 FCC Rcd 19844, 19867-69 ¶¶ 54-57 (2000).

[794] *700 MHz Public Safety Ninth Notice*, 21 FCC at 14843 ¶ 20.

to, experience with public safety frequency coordination, not-for-profit status, and ability to represent directly all public safety interests. We sought comment on these and other criteria, "to ensure that the national licensee is able and qualified to adequately address the needs of all public safety users."[795] We also proposed "that no commercial interest may be held in the national license or licensee, and that no commercial interest may participate in the management of the national licensee."[796]

372. Several commenters state that the national public safety licensee should not be, or be controlled in any way, by a commercial entity.[797] Other commenters, however, express support for permitting a commercial interest to be held in the public safety broadband licensee.[798] We also received support in the record that the nationwide public safety licensee be a non-profit organization.[799]

373. Discussion. Based on the comments filed on this issue, we establish certain baseline criteria for selecting the Public Safety Broadband Licensee. First, we adopt our proposal that no commercial interest may be held in this licensee, and that no commercial interest may participate in the management of the licensee. The 700 MHz broadband spectrum to be licensed to the Public Safety Broadband Licensee is public safety spectrum and must be controlled by and managed by public safety.[800] We thus reject those comments that express support for permitting a commercial interest to be held in the licensee. Second, for similar reasons, we also adopt our proposal that the licensee must be a non-profit organization. Third, the Public Safety Broadband Licensee must be as broadly representative of the public safety radio user community as possible, including the various levels (*e.g.*, state, local, county) and types (*e.g.*, police, fire, rescue) of public safety entities.[801] Fourth, to ensure that the Public Safety Broadband Licensee is qualified to provide public safety services, an organization applying for the Public Safety Broadband License is required to submit written certifications from a total of at least ten geographically diverse state and local governmental entities, with at least one certification from a state government entity and one from a local government entity. The written certifications from these state and local governmental entities must verify that: (1) they have authorized the applicant to use spectrum at

[795] *Id.* at 14844 ¶ 27.

[796] *Id.*

[797] APCO *700 MHz Public Safety Ninth Notice* Comments at 7; *see also* Peha *700 MHz Public Safety Ninth Notice* Comments at 5 ("We cannot place an unregulated for-profit monopoly in charge of critical infrastructure."); Cyren Call *700 MHz Public Safety Ninth Notice* Comments at 9 ("[T]he national licensee must represent and be entirely controlled by public safety entities. Its independence and authority must not be compromised by a commercial entity(s) having even a de facto or, worse, a de jure controlling interest in that licensee.").

[798] *See* Sprint-Nextel *700 MHz Public Safety Ninth Notice* Comments at 7 ("Some degree of participation by commercial entities, such as through a non-controlling or otherwise capped interest, would allow entities with specialized knowledge and real-world experience to more meaningfully contribute to the successful operation and management of an efficient, nationwide, public safety broadband network."); NTCH *700 MHz Public Safety Ninth Notice* Comments at 3 ("instead of divorcing [the Public Safety Broadband Licensee] from commercial carriers, it would be *made up of* them.") (emphasis in original); Mercatus *700 MHz Public Safety Ninth Notice* Comments at 10 ("A *for-profit mission and quality service to first responders should not be considered mutually exclusive ideals.*").

[799] *See* NPSTC *700 MHz Further Notice* Comments at 6; Nielson *700 MHz Public Safety Ninth Notice* Comments at 3 ("This authority should also be non-profit to avoid any commandeering of the products to be offered and to prevent a monopoly in their availability.").

[800] APCO *700 MHz Public Safety Ninth Notice* Comments at 7; NPSTC *700 MHz Further Notice* Comments at 5; Virginia Fire Chiefs Association *700 MHz Further Notice* Comments at 2; Cyren Call April 5, 2007 *Ex Parte* Notice, Attach. at 4 ("Only by having the FCC license held by an entity controlled by Public Safety will the public safety community have ultimate assurance that the network will be built and operated to meet its requirements.").

[801] NATOA *700 MHz Further Notice* Comments at 3-4; *see also* San Diego County *700 MHz Further Notice* Comments at 12.

763-768 MHz and 793-798 MHz to provide the authorizing entity with public safety services; and (2) the authorizing entities' primary mission is the provision of public safety services.[802] Our goal in establishing these criteria is to ensure that the Public Safety Broadband Licensee focuses exclusively on the needs of public safety entities that stand to benefit from the interoperable broadband network.

374. To ensure broad representation and to provide a balance of the various public safety interests, as stated above, representation on the Board of Directors of the Public Safety Broadband Licensee must include organizations representative not only of first responders, but of local, county, and state governments whose public safety entities must have a voice, as well as emergency management officials who represent first responders at a state and local level. To that end, we require that the Public Safety Broadband Licensee be governed by a voting board consisting of eleven members, one each from the nine organizations representative of public safety listed below, and two at-large members selected by the Public Safety and Homeland Security Bureau and the Wireless Bureau, jointly on delegated authority.[803] The nine organizations that shall be represented on the board, with each organization represented by one voting board member, are: the Association of Public Safety Communications Officials (APCO);[804] the National Emergency Number Association (NENA);[805] the International Association of Chiefs of Police (IACP);[806] the International Association of Fire Chiefs (IAFC);[807] the

[802] We believe these requirements address RCC's concern that the Public Safety Broadband Licensee be qualified to provide "public safety services" pursuant to Section 337(f)(1)(B). *See* RCC *700 MHz Further Notice* Comments at 14 & 21-22. Section 337(a)(1) provides that the Commission must allocate 24 megahertz of spectrum in the Upper 700 MHz band for "public safety services." Section 337(f)(1)(B), in turn, provides that "public safety services" are services that are provided (i) by State or local government entities; or (ii) by nongovernmental organizations that are authorized by a governmental entity whose primary mission is the provision of such services. Because the Public Safety Broadband Licensee will be a nongovernmental organization that will be authorized by a government entity whose primary mission is the provision of public safety services, it will clearly be providing "public safety services" consistent with the requirements of Section 337(f)(1)(B)(ii). We recognize that Section 337(f)(1)(B) by its terms only requires that a nongovernmental organization receive authorization from one governmental entity whose primary mission is the provision of public safety services. However, given the nature of the license at issue here – a nationwide license that will support an interoperable network for use by all public safety entities across the country – we believe that applicants for the Public Safety Broadband License should be able to demonstrate support from a wide range of public safety entities across the country. In particular, authorizations from a broad sample of the public safety community for which the service is intended will better reflect the fact that the mission of the Public Safety Broadband Licensee derives from the primary public safety mission of a nationwide array of governmental entities. Furthermore, as the Public Safety Broadband Licensee launches its service in a given area, we will require that it provide (prior to launch) the same type of certification from at least one public safety governmental entity that plans on using the service in the area that will be served.

[803] We clarify that, in all cases in this Second Report and Order in which authority to take actions is delegated jointly to the Chiefs of PSHSB and WTB, we require any such actions to be approved by both Chiefs.

[804] APCO was established in 1935 and is dedicated to public safety communications. It has 15,000 members from all types of public safety organizations including emergency call centers, law enforcement agencies, emergency medical services, fire departments and emergency management centers. *See* APCO, at http://www.apcointl.com. APCO's membership on the Board of Directors of the Public Safety Broadband Licensee would ensure broad representation of communications professionals in the public safety community.

[805] NENA fosters the technological advancement, availability and implementation of a universal emergency telephone number system, including IP-based Next Generation 911 capabilities. In carrying out its mission, NENA promotes research, planning, training and education. NENA presently has 7,000 members. *See* NENA, at http://www.nena.org. NENA's membership on the Board of Directors of the Public Safety Broadband Licensee would ensure representation of first responders and consideration of issues regarding the 911 link between the public and first responders.

[806] The IACP is the world's oldest and largest nonprofit membership organization of police executives, with over 20,000 members in over 89 different countries. IACP's leadership consists of the operating chief executives of (continued....)

National Sheriffs' Association;[808] the International City/County Management Association (ICMA);[809] the National Governor's Association (NGA);[810] the National Public Safety Telecommunications Council (NPSTC);[811] and the National Association of State Emergency Medical Services Officials (NASEMSO).[812] Each of the two members at large also shall have one vote. No member organization shall be controlled by a commercial entity. If any one of these organizations cannot participate on the voting board for any reason, such organization shall be replaced on the board by another at-large member, selected by the Public Safety and Homeland Security Bureau and the Wireless Bureau, jointly on delegated authority. This composition of the voting board ensures that local public safety agencies and governments will continue to have a voice in the use of the 700 MHz public safety broadband spectrum, as the overwhelming number of first responders are local government employees or volunteers.

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international, federal, state and local agencies of all sizes. *See* IACP, at http://www.theiacp.org. IACP's membership on the Board of Directors of the Public Safety Broadband Licensee would ensure representation of a broad cross-section of police departments.

[807] Established in 1873, the IAFC is a network of more than 12,000 chief fire and emergency officers. Its members are the world's leading experts in fire fighting, emergency medical services, terrorism response, hazardous materials spills, natural disasters, search & rescue, and public safety legislation. *See* IAFC, at http://www.iafc.org. IAFC's membership on the Board of Directors of the Public Safety Broadband Licensee would ensure representation of a broad cross-section of firefighters and emergency medical services first responders.

[808] Chartered in 1940, the National Sheriffs' Association is a non-profit organization dedicated to raising the level of professionalism among sheriffs, their deputies, and others in the field of criminal justice and public safety. *See* National Sheriffs' Association at http://www.sheriffs.org. The National Sheriffs' Association's membership on the Board of Directors of the Public Safety Broadband Licensee would ensure representation of law enforcement within rural and local levels with smaller populations.

[809] Founded in 1914, the ICMA has 8,200 members and is a local government leadership and management organization. Its mission is to create excellence in local governance by advocating and developing the professional management of local governments worldwide. *See* ICMA, at http://www.icma.org. ICMA's membership on the Board of Directors of the Public Safety Broadband Licensee would ensure representation of local governments of all sizes, and will give a voice to city, town, and county governments of all sizes responsible for public safety and first responder organizations.

[810] Founded in 1908, the NGA is the collective voice of the nation's governors. It provides governors and their senior staff members with services that include representing states on Capitol Hill and before the Administration on key federal issues and developing policy reports on innovative state programs. *See* NGA, at http://www.nga.org. NGA's membership on the Board of Directors of the Public Safety Broadband Licensee would ensure representation of state governments, including state police and national guard agencies, and coordination with efforts to obtain public safety communications interoperability at the state level.

[811] NPSTC is a federation of organizations whose mission is to improve public safety communications and interoperability through collaborative leadership. *See* NPSTC, at http://www.npstc.org. Formed on May 1, 1997, NPSTC is a federation of organizations representing public safety telecommunications. NPSTC was originally formed to encourage and facilitate implementation of the findings and recommendations of the Public Safety Wireless Advisory Committee (PSWAC), established in 1994 by the Commission and the National Telecommunications and Information Administration (NTIA) to evaluate the wireless communications needs of local, tribal, state, and federal public safety agencies through the year 2010, identify problems, and recommend possible solutions.

[812] NASEMSO was formed in 1980 as a non-profit organization. NASEMSO supports its members in developing EMS policy and oversight, as well as in providing vision, leadership and resources in the development and improvement of state, regional and local EMS and emergency care systems. *See* NASEMSO, at http://www.nasemsd.org. NASEMSO's membership on the Board of Directors of the Public Safety Broadband Licensee would ensure consideration of the unique communications needs of medical services first responders at all levels of government.

375. As stated above, each member of the Board of Directors shall have only one vote, and decisions of the Public Safety Broadband Licensee, unless otherwise stated herein, shall be by a simple majority vote of the Board of Directors. In addition, we specify below certain minimum elements of the Articles of Incorporation or Bylaws, as appropriate, of the Public Safety Broadband Licensee or for which there can be no conflicting provisions:

Articles of Incorporation:

- Purposes: Include, among the purposes of the Public Safety Broadband Licensee, the following: *In its role as the licensee and manager of the Public Safety Broadband* License, the purpose of the Public Safety Broadband Licensee is to represent the interests of all public safety entities to ensure that their broadband spectrum needs are met in a balanced, fair, and efficient manner, in the interests of best promoting the protection of life and property of the American public.
- Powers: Include, among the powers of the Public Safety Broadband Licensee, the following: The licensee shall, consistent with its purposes, enter into agreements to ensure the construction, maintenance, and operation of a nationwide, interoperable, public safety broadband network.
- Corporate Status: Specify non-profit status.
- Directors: Only those entities identified in this Second Report and Order for representation on the Board of Directors shall be eligible for membership. Each member entity shall have one representative on the Board of Directors.
- Amendment. The Articles of Incorporation may be amended, repealed, or altered in whole or in part by a two-thirds (2/3) majority vote at any properly called meeting of the Board of Directors, so long as no such action conflicts with any of the requirements, prohibitions, or provisions of this Second Report and Order.

Bylaws:

- Members. Each member entity shall have one vote on the Board of Directors. Proxy voting shall not be allowed.
- Discontinuance of Membership. Any member of the Board of Directors may at anytime resign from membership by forwarding to the FCC, to the attention of the Defense Commissioner, a resignation in writing, provided that any outstanding obligations of such member to the Public Safety Broadband Licensee have been fully discharged. No Board Member may be removed or otherwise have their participation on the Board of Directors limited at any time except by Order of the FCC, on delegated authority to the Chiefs of the PSHSB and WTB.
- Officers. A Chairman of the Board, Vice Chairman of the Board, and Secretary/Treasurer each shall be selected every two years from among the members of the Board of Directors, by a two-thirds (2/3) majority vote of the Board of Directors. The Chairman shall have, as a representative of a member entity, one vote, regardless of his/her position as Chairman.
- Duties of Chairman. The Chairman shall be responsible for the orderly and efficient conduct of the business of the Board of Directors; however, nothing shall entitle the Chairman to conduct the business of the Public Safety Broadband Licensee except as explicitly authorized and approved by the Board of Directors by two-thirds (2/3) majority vote.
- Duties of Vice Chairman. The Vice Chairman shall perform duties as assigned to him/her by the Chairman and/or the Board of Directors, and shall act as Chairman in the absence of the Chairman.

- Duties of Secretary/Treasurer. The Secretary/Treasurer shall be responsible for the financial affairs of the Public Safety Broadband Licensee, and shall ensure that the Public Safety Broadband Licensee files, on a quarterly basis, as required herein, a complete financial accounting to the Commission, as well as make available, upon request by the Commission or Commission staff, financial statements and/or other financial information as requested.
- Quorum. A majority of the members of the Board of Directors shall constitute a quorum for the transaction of business by the Board; however, the requirement of a majority or two-thirds (2/3) majority vote shall mean a majority of all members of the Board of Directors, not simply of members in attendance at a meeting and counted as part of the Quorum.
- Absence. Should any member of the Board of Directors be absent from three consecutive meetings of the Board, such member entity shall be presented to the Chiefs of PSHSB and WTB to decide, on delegated authority, whether such absence constitutes resignation of such member entity.
- Amendment. The Bylaws may be amended, repealed, or altered in whole or in part by a two-thirds (2/3) majority vote any properly called meeting of the Board of Directors, so long as no such action conflicts with any of the requirements, prohibitions, or provisions of this Second Report and Order.
- Non-profit Status. As a non-profit corporation, the Public Safety Broadband Licensee shall have no authority to issue capital stock or equity. Under no circumstances may a Member of the Board of Directors be controlled by or represent a commercial entity.
- Compensation. Any compensation to or on behalf of a Board Member shall be limited to services performed in furtherance of the purposes of the Public Safety Broadband Licensee, and shall be approved by two-thirds (2/3) vote of the entire Board of Directors.

376. To the extent some of these provisions may require extensive FCC oversight, we find such oversight in the affairs of the Public Safety Broadband Licensee to be appropriate. Such oversight is necessary in light of the nature of the public safety broadband spectrum licensed to the Public Safety Broadband Licensee as a national asset, and in furtherance of the Commission's role in ensuring the protection and efficient use of such asset for the benefit of the safety of the public.

377. In order to ensure the level of transparency required for the Commission and its staff to provide meaningful oversight of the affairs of the Public Safety Broadband Licensee, the Public Safety Broadband Licensee shall be required to submit, on a quarterly basis, a full financial accounting to the Commission, in a format to be set forth in the NSA (in order to ensure agreement from the commercial partner to such disclosure, as such disclosure will be related to the financial affairs of the commercial partner), and as approved by the Commission. Such quarterly financial reports shall be filed with the Commission, with a copy to the Chiefs of the Wireless and the Public Safety and Homeland Security Bureaus.

c. Selection Process

378. Background. We have adopted herein a single nationwide licensee approach and specified minimum eligibility criteria. As noted, this is a significant departure from our traditional approach to licensing public safety operations.

379. Discussion. We conclude that the Public Safety Broadband Licensee will have a number of novel and significant responsibilities that will be essential to the success of the national broadband public safety network. Thus, we take very seriously the importance of selecting a well-qualified entity to serve as this licensee. Further, we recognize that the unique requirements of this licensee that we establish herein likely means that no existing entity could serve this role; rather, the Public Safety

Broadband Licensee may need to be newly formed.

380. We delegate authority to the Chief of the PSHSB to issue a public notice within thirty days of the release of this Second Report and Order soliciting applications for the Public Safety Broadband Licensee. The public notice shall specify the baseline criteria we establish herein, and describe the procedures and other requirements for submitting applications. The Commission will select the Public Safety Broadband Licensee and grant to it the Public Safety Broadband License consistent with the requirements and considerations set forth herein.

d. Responsibilities of the Public Safety Broadband Licensee

381. Background. In the *700 MHz Public Safety Ninth Notice*, we sought comment on how a public safety broadband licensee could best implement a broadband network that maximizes the inherent advantages of broadband communications.[813] We also envisioned the prospect of this licensee engaging in a public/private partnership with a commercial entity for shared use of a common network architecture.[814]

382. APCO recommends the public safety broadband licensee retain the discretion to make its own determination regarding system architecture, the particular technology to be used and network resiliency capability.[815] Motorola states that the licensee must have the ability to evaluate and determine the most suitable broadband technology to meet the needs of public safety.[816] Similarly, Cyren Call argues that the licensee should have ultimate control over the development of the public safety specific technical standards and requirements to be incorporated into the network.[817] The Virginia Fire Chiefs Association comments that the licensee should have discretion over the degree of commercial use of the public safety network.[818] NPSTC describes among the responsibilities of the licensee to negotiate an agreement with the commercial partner, and structure the broadband network across the country, by aligning user capacity needs, advising on application and device standards, invoking priority access to the commercial broadband spectrum, and examining commercial secondary use of the public safety broadband spectrum.[819]

383. Discussion. We find, consistent with the comments we received, that the objectives specified in the *700 MHz Public Safety Ninth Notice* can best be met by affording the Public Safety Broadband Licensee significant flexibility and control in connection with the construction and use of the nationwide broadband public safety network. Providing the Public Safety Broadband Licensee sufficient flexibility will allow it to specify the requirements of the public safety portion of the broadband network to best meet public safety needs. At the same time, we seek to balance the discretion afforded the Public Safety Broadband Licensee with the concurrent and separate responsibilities of the Upper 700 MHz Band D Block licensee and, of course, the public interest. Accordingly, we assign to the Public Safety Broadband Licensee the following general responsibilities:[820]

- Negotiation of the Network Sharing Agreement (NSA) with the winning bidder at auction for

[813] *700 MHz Public Safety Ninth Notice*, 21 FCC Rcd at 14845 ¶ 31.

[814] *See id.* at 14845-48 ¶¶ 29, 32, 41.

[815] APCO *700 MHz Public Safety Ninth Notice* Comments at 10-11.

[816] Motorola *700 MHz Public Safety Ninth Notice* Comments at 15.

[817] Cyren Call *700 MHz Further Notice* Comments at 8.

[818] Virginia Fire Chiefs *700 MHz Further Notice* Comments at 2.

[819] *See* NPSTC *700 MHz Further Notice* Comments at 8.

[820] Each of these responsibilities is addressed more fully at various points throughout this Second Report and Order.

the Upper 700 MHz Band D Block license, pursuant to the terms and timelines described below.

- General administration of access to the national public safety broadband network by individual public safety entities, including assessment of usage fees to recoup its expenses and related frequency coordination duties.
- Regular interaction with and promotion of the needs of the public safety entities that would utilize the national public safety broadband network, within the technical and operational confines of the NSA.
- Use of its national level of representation of the public safety community to interface with equipment vendors on its own or in partnership with the D Block licensee, as appropriate, to achieve and pass on the benefits of economies of scale concerning network and subscriber equipment and applications. Any partnership with the D Block licensee in conjunction with this responsibility shall not limit or alter the Public Safety Broadband Licensee's right to determine and approve the specifications of public safety equipment that is used on its network.[821]
- Sole authority, which cannot be waived in the NSA, to approve, in consultation with the D Block licensee, equipment and applications for use by public safety entities on the public safety broadband network. Accordingly, state and local public safety entities must obtain approval from the Public Safety Broadband Licensee prior to employing any equipment or applications on the public safety broadband network. State or local entities may seek review of a decision by the Public Safety Broadband Licensee not to permit a desired piece of equipment or application, or particular specifications for equipment or applications, from the Chief, Public Safety and Homeland Security Bureau, on an expedited basis, and then to the full Commission.
- Coordination of stations operating on public safety broadband spectrum with public safety narrowband stations, including management of the internal public safety guard band.
- Oversight and implementation of the relocation of narrowband public safety operations in channels 63 and 68, and the upper 1 megahertz of channels 64 and 69.
- Exercise of sole discretion, pursuant to Section 2.103 of the Commission's rules, whether to permit Federal public safety agency use of the public safety broadband spectrum, with any such use subject to the terms and conditions of the NSA.[822]
- Responsibility for reviewing requests for wideband waivers and including necessary conditions or limitations consistent with the deployment and construction of the national public safety broadband network, and consistent with the procedures and restrictions in connection with such waivers that we have established elsewhere in this Second Report and Order.
- Responsibility to facilitate negotiations between the winning bidder of the D Block license and local and state entities to build out local and state-owned lands.

[821] *See infra* ¶ 405.

[822] The Commission previously has determined that Section 337 does not bar Federal Government public safety entities from using the 700 MHz Band under certain conditions. Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010, WT Docket No. 96-86, *First Report & Order and Third Notice of Proposed Rulemaking*, 14 FCC Rcd 152, 184 ¶ 66 (1998); *see also* 47 C.F.R. § 2.103(b).

e. Licensing Issues

384. Background. As noted above, in the *700 MHz Public Safety Ninth Notice*, we proposed licensing the 700 MHz public safety spectrum on a nationwide basis.[823] We suggested certain baseline performance requirements for the national licensee, but otherwise made no specific proposals with regard to license terms.[824]

385. Discussion. We will grant the nationwide 700 MHz public safety broadband license for a term not to exceed 10 years from February 17, 2009, which coincides with the term of the NSA and the term of the D Block license established elsewhere in this Second Report and Order. With certain limited exceptions, this geographic area license will provide the Public Safety Broadband Licensee with blanket authority to permit construction and operations of broadband base stations across the national license area.[825] The licensee will have a renewal expectancy, pursuant to which its license will be renewed barring violations of law, rules or policy warranting denial of renewal, or changes in regulatory direction under the rulemaking process, necessitating denial. Finally, we will permit public safety end users (mobile/portable operation) to operate without individual licenses under the auspices of the Public Safety Broadband License. In order to ensure the integrity of the nationwide broadband network and the 700 MHz Public/Private Partnership that we are enabling, we will prohibit disaggregation or partitioning of the Public Safety Broadband License. In addition, we prohibit the voluntary assignment or transfer of control of this license.[826] Also, as discussed elsewhere in this Second Report and Order, we will allow the Upper 700 MHz D Block Licensee to gain access to the 700 MHz public safety broadband spectrum on a secondary preemptible basis, through a spectrum leasing arrangement with the Public Safety Broadband Licensee, for use in the 700 MHz Public/Private Partnership.

C. 700 MHz Public/Private Partnership

386. In this section, we adopt a regulatory framework for establishing a public/private partnership between a 700 MHz Band commercial licensee and the Public Safety Broadband Licensee to further the Commission's goal of making a nationwide, interoperable broadband network available to state and local public safety users. Consistent with the proposal raised in the *700 MHz Further Notice*, we conclude that it would serve the public interest to adopt service rules establishing a nationwide 10-megahertz commercial license in the Upper 700 MHz Band D Block that will be awarded to the winning bidder once it has entered into a Commission-approved Network Sharing Agreement (NSA) with the Public Safety Broadband Licensee. This D Block license will be conditioned upon its commercial licensee constructing and operating a nationwide, interoperable broadband network across both the D Block and the 700 MHz public safety broadband spectrum. This network must be used to provide both a commercial service and a broadband network service to public safety entities.[827]

387. Accordingly, we designate the D Block in the Upper 700 MHz Band for use with the 700 MHz Public/Private Partnership that we are enabling, and we provide substantive and procedural

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[823] *See 700 MHz Public Safety Ninth Notice*, 21 FCC Rcd at 14843 ¶ 19.

[824] *Id.*

[825] The license area of the Public Safety Broadband License is composed of the contiguous 48 states, Alaska, Hawaii, the Gulf of Mexico, and the U.S. territories. The geographic scope of the Public Safety Broadband License therefore matches the scope of the D Block license.

[826] We will treat on a case-by-case basis possible involuntary transfers of control of the Public Safety Broadband Licensee, or other possible transfers of control based on changes in the Board, such as the disbanding of a constituent organization.

[827] *700 MHz Further Notice*, 22 FCC Rcd at 8161 ¶ 272.

safeguards applicable to this public/private partnership to address public safety concerns.[828] We establish requirements regarding the nature of the shared wireless broadband network and the respective rights and obligations of the D Block licensee and the Public Safety Broadband Licensee regarding their partnership and the network. We also adopt rules governing the establishment and execution, prior to the award of the D Block license, of the NSA between the Public Safety Broadband Licensee and the winning bidder of the D Block to facilitate shared use of the network and the spectrum over which it operates.[829] In addition, we place certain other conditions on the D Block license to protect services to the public safety community and facilitate the success of the 700 MHz Public/Private Partnership, including requirements relating to the organization and structure of the partnership, reporting requirements, and a prohibition on the discontinuance of public safety operations. Finally, we address other issues, including bidding credits, license term and renewal, partitioning and disaggregation, license assignment and transfer, wholesale, open access, and roaming proposals, and the applicability of certain regulatory requirements to the D Block licensee.

1. Adoption of the 700 MHz Public/Private Partnership

388. Background. In the *700 MHz Further Notice*, we sought comment on Frontline's proposal that the Commission designate a nationwide 10-megahertz commercial license in which the licensee would be responsible for constructing and operating a common, interoperable broadband network infrastructure, operating on spectrum associated both with its license and the 700 MHz public safety broadband license, which would be used to provide both a commercial service and a broadband network service to public safety entities.[830] The commercial network would have access to the public safety broadband spectrum on a secondary basis,[831] and broadband public safety users would have priority access to the network in times of emergency.[832] Frontline proposed specific performance requirements requiring the commercial licensee to meet certain specified build-out benchmarks during the fourth, seventh, and tenth years. Frontline also proposed a number of other restrictions on the commercial services provided, including that those commercial services be provided on a "wholesale," "open-access" basis only, with nationwide roaming services.[833]

389. In Frontline's filings on which we sought comment, Frontline contended that its proposal would serve the key communications needs of the public safety community. In particular, it argued that the proposal would provide the public safety community with more broadband spectrum; facilitate the build-out of a nationwide, interoperable public safety broadband network; promote maximum equipment choice; and provide public safety with unit-level control over local agency networks.[834] Frontline also

[828] Any reference to D Block in this order will refer specifically to the Upper 700 MHz D Block, except where specifically noted to the contrary.

[829] Parties to the NSA are the Public Safety Broadband Licensee, the winning bidder of the D Block license, the special purpose bankruptcy remote entity to be the D Block licensee, the special purpose bankruptcy remote entity to hold the network assets, and the Operating Company. References in this Second Report and Order to the rights and obligations of the "Upper 700 MHz D Block licensee," the "D Block licensee," or other formulations used in this order include, as appropriate, the exercise or discharge of such rights or obligations, respectively, by related entities that are provided for in the NSA or otherwise as authorized by the Commission. Upon issuance of the D Block license, the winning bidder of the D Block license will assign all of its rights and obligations under the Network Sharing Agreement to the D Block licensee.

[830] *700 MHz Further Notice*, 22 FCC Rcd at 8164 ¶ 277.

[831] *Id.* at 8161-62 ¶ 273 n.553.

[832] *Id.* at 8162 ¶ 274.

[833] *Id.* at 8163 ¶ 275.

[834] Frontline *700 MHz Public Safety Ninth Notice* Comments at 1.

contended that its proposal would benefit other stakeholders, such as rural and smaller carriers who would benefit from nationwide roaming services.[835]

390. We sought comment on the likely effects of Frontline's proposal on both commercial and public safety users in the 700 MHz Band and whether adoption of such a proposal would serve the public interest. We also sought comment generally on whether, and to what extent, the Commission should: (a) adopt certain, but not all, elements of the Frontline proposal; (b) modify any elements of the proposal, adopt any additional requirements, or adopt any alternative requirements to achieve the same or similar public interest goals; and (c) consider alternative approaches to encourage public-private partnerships for sharing spectrum between public safety users and commercial licensees in the 700 MHz Band.[836]

391. In response to the *700 MHz Further Notice*, commenters supporting Frontline's proposal argue that, although some jurisdictions may be able to raise funds sufficient to build out advanced networks, many others cannot. These commenters contend that build-out of a public safety broadband network through private capital represents the best chance for establishing a nationwide, interoperable public safety broadband network.[837] For example, Embarq argues that "a single network built, paid for, and operated by a wholesale-only provider, such as suggested by the Frontline proposal, provides the best chance for various different federal, state, and local Public Safety agencies to have a unified, effective network architecture supporting public safety."[838] Several commenters express their support for establishing public/private partnerships more generally. Sprint Nextel notes that "public-private partnerships can enable public safety agencies to take advantage of commercial, off-the-shelf technology and otherwise benefit from commercial carriers' investments in research and development of advanced wireless technologies."[839] Google notes that, "given the immense expense and expertise necessary to build and operate a first-class wireless network, commercial and non-commercial entities should be given all the regulatory tools necessary to work together to help solve each other's problems."[840] Some parties also express their support for the conditions that Frontline would have us place on the commercial licensee associated with the proposed public/private partnership.[841]

392. Other commenters oppose Frontline's proposal. Several contend that Section 337 of the Act prohibits the Commission from adopting the Frontline proposal.[842] Others argue that the conditions Frontline proposes for the commercial licensee in the partnership, including wholesale restrictions, open access, and roaming requirements, would likely reduce the number of potential bidders and drive down the price of the spectrum[843] or that such conditions would require the public/private partnership to operate

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[835] *Id.*

[836] *Id.* at 8160-68 ¶¶ 268-290.

[837] *See, e.g.*, Cellular South *700 MHz Further Notice* Comments at 19-20; Embarq *700 MHz Further Notice* Comments at 3-4; Cyren Call *700 MHz Further Notice* Reply Comments at vi; APCO *700 MHz Further Notice* Reply Comments at 2.

[838] Embarq *700 MHz Further Notice* Comments at 3-4.

[839] Sprint Nextel *700 MHz Further Notice* Comments at 7-8.

[840] Google *700 MHz Further Notice* Comments at 8.

[841] *See, e.g.*, PISC *700 MHz Further Notice* Comments at 12; CCIA *700 MHz Further Notice* Comments at 5-7; Cellular South *700 MHz Further Notice* Comments at 19-20.

[842] CTIA *700 MHz Further Notice* Comments at 19; L-3 *700 MHz Further Notice* Comments at 10; MetroPCS *700 MHz Further Notice* Comments at 10; NATOA 700 *MHz Further Notice* Comments at 15; New York, NY *700 MHz Further Notice* Comments at 5-7; RCC *700 MHz Further Notice* Comments at 20-22.

[843] Alltel *700 MHz Further Notice* Comments at 5 (stating that "limiting the number of bidders through service restrictions and public interest obligations could result in a below market price for the E Block spectrum, effectively (continued....)

under a business model that is risky and unproven.[844] Opponents also argue that, instead of imposing restrictive conditions, the Commission should let market forces work to provide infrastructure and/or service to the public safety community.[845]

393. Opponents also express other concerns about the risks and uncertainties associated with certain aspects of the Frontline proposal.[846] Some are skeptical that a commercial operator of a national public safety broadband network will serve public safety's needs.[847] Noting Frontline's proposal that the commercial licensee must "consult" with the public safety broadband licensee on design, construction, and operation of the shared network, NATOA argues that "the mere duty to 'consult' does nothing to protect the interests and goals of the public safety community."[848]

394. Finally, several commenters express partial or conditional support for the Frontline proposal. For example, Cyren Call generally expresses support for the public/private partnership approach outlined in Frontline's proposal, but raises concerns about several aspects of the proposal and recommends that the Commission address certain "structural defects" in the proposal.[849] APCO cites the potential benefits of the public safety/private partnership approach outlined in Frontline's proposal, but argues that additional measures are necessary to ensure that such a partnership serves the needs of the public safety community.[850]

395. Discussion. We conclude that establishing a regulatory framework to effectuate a public/private partnership between the Commission-selected Public Safety Broadband Licensee and the winning bidder of the Upper 700 MHz Band D Block license would serve the public interest by enabling the construction of a nationwide, interoperable broadband public safety network to protect the safety of the life, health and property of all Americans. We also find, however, that several modifications to Frontline's proposal, as well as additional measures, are necessary to ensure that such a partnership is successful and serves the needs of the public safety community. Accordingly, we designate the D Block in the Upper 700 MHz Band to be licensed to a commercial entity on a nationwide basis for the purpose of entering into the 700 MHz Public/Private Partnership with the Public Safety Broadband Licensee, and

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giving it away without any concomitant guarantee of performance of the licensee's promises."); AT&T *700 MHz Further Notice* Comments at 10; CTIA 700 *MHz Further Notice* Comments at 18. *But see* Frontline *Ex Parte*, WT Docket No. 06-150 (filed June 29, 2007) (arguing that adopting the Frontline proposal will increase the price of the commercial license subject to public/private partnership obligations, by encouraging new entrants to bid and by promising the winner access to public safety spectrum on a secondary basis).

[844] AT&T *700 MHz Further Notice* Comments at 12-13; MetroPCS *700 MHz Further Notice* Comments at 10-11; NATOA *700 MHz Further Notice* Comments at 11; Union *700 MHz Further Notice* Comments at 16.

[845] MetroPCS *700 MHz Further Notice* Comments at 80-81 (recommending that the Commission provide incentives for all commercial licensees to forge cooperative arrangements with public safety, rather than "endorsing a monopoly service provider"); Arcadian *700 MHz Further Notice* Reply Comments at 4-6; AT&T *700 MHz Further Notice* Reply Comments at 10-17; Stelera Wireless *700 MHz Further Notice* Reply Comments at 1-3.

[846] Arcadian *700 MHz Further Notice* Reply Comments at 4-6; NATOA *700 MHz Further Notice* Reply Comments at 5-6.

[847] L-3 *700 MHz Further Notice* Comments at 11-12; NATOA *700 MHz Further Notice* Comments at 12; New York, NY *700 MHz Further Notice* Comments at 7-8; RCC *700 MHz Further Notice* Reply Comments at 23.

[848] NATOA *700 MHz Further Notice* Comments at 12.

[849] Cyren Call *700 MHz Further Notice* Comments at iii-iv.

[850] APCO *700 MHz Further Notice* Comments at 14-22. Other commenters also argue that additional conditions should be imposed on the public safety/private partnership licensee to ensure that the partnership serves the needs of public safety. *See, e.g.*, Fire Fighters Georgia *700 MHz Further Notice* Comments at 2; Fire Fighters Hawaii *700 MHz Further Notice* Comments at 2; NPSTC *700 MHz Further Notice* Reply Comments at 3.

we adopt a number of conditions, requirements, and procedures to safeguard services to public safety entities and address concerns about the success of the partnership, as discussed more fully below.

396. In the *700 MHz Public Safety Ninth Notice*, we proposed a plan to promote the rapid deployment of a nationwide, interoperable, broadband public safety network.[851] Our objective was to maximize public safety access to interoperable, broadband spectrum in the 700 MHz Band, and to foster and promote the development and deployment of advanced broadband applications using modern, IP-based system architecture.[852] We find that promoting commercial investment in the build-out of a shared network infrastructure addresses the most significant obstacle to constructing a public safety network – the limited availability of public funding. Providing for a shared infrastructure that uses the D Block and the public safety broadband spectrum will help achieve significant cost efficiencies.[853] It will allow public safety agencies "to take advantage of commercial, off-the-shelf technology and otherwise benefit from commercial carriers' investments in research and development of advanced wireless technologies."[854] It will also benefit the public safety community by providing it with access to an additional 10 megahertz of broadband spectrum during emergencies, when it is needed most. Most importantly, it will provide all of these benefits on a nationwide basis. The public/private partnership approach thus provides the most practical means of speeding deployment of a nationwide, interoperable, broadband network for public safety service that is designed to meet their needs in times of crisis.[855] At the same time, it will provide the D Block licensee with rights to operate commercial services in the 10 megahertz of public safety broadband spectrum on a secondary, preemptible basis, which will both help to defray the costs of build-out and ensure that the spectrum is used efficiently.

397. We are not persuaded that alternatives to a public/private partnership suggested by some commenters would achieve the same benefits. For example, if we merely provided incentives for carriers voluntarily to enter into equivalent partnerships, we could not be confident that any carrier would actually agree to such an arrangement on a nationwide basis. Such *ad hoc* partnerships could occur at a local or regional level, leaving large areas of the nation without an interoperable public safety network. Separate, independently-created public/private networks could also operate on different spectrum, making interoperability across the different networks difficult to achieve.

398. In the sections that follow, we consider the record in this proceeding regarding establishing a public/private partnership for development of a nationwide, shared interoperable wireless broadband network – including those issues Frontline raises in its proposal and those commenters identify – and we address the specific features that we establish with regard to the 700 MHz Public/Private Partnership.

399. First, we set forth essential components of the 700 MHz Public/Private Partnership. We specify certain parameters for the shared wireless broadband network, including features relating to the technology platform, signal coverage, robustness and reliability, capacity, security, operational capabilities and control, and certain equipment specifications. With regard to the spectrum shared by the

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[851] *700 MHz Public Safety Ninth Notice*, 21 FCC Rcd at 14838 ¶ 3.

[852] *Id.*

[853] *See, e.g.*, APCO *700 MHz Further Notice* Comments at 11; Northrop Grumman *700 MHz Further Notice* Comments at 5; Sprint Nextel *700 MHz Further Notice* Comments at 7-8.

[854] Sprint Nextel *700 MHz Further Notice* Comments at 7-8; *see also* Cyren Call *700 MHz Further Notice* Reply Comments at vi.

[855] *See, e.g.*, APCO *700 MHz Further Notice* Comments at 11; Cellular South 700 *MHz Further Notice* Comments at 19-20; Embarq *700 MHz Further Notice* Comments at 3-4; Cyren Call *700 MHz Further Notice* Reply Comments at vi

common network, we require the Public Safety Broadband Licensee to lease the public safety broadband spectrum for commercial use by the D Block licensee on a secondary, preemptible basis, and we provide that public safety entities will have priority access to the Upper 700 MHz D Block spectrum during emergencies. We also establish certain minimal performance requirements relating to construction and build-out of the shared 700 MHz Public/Private Partnership network. Next, we specify certain mandatory provisions of the Network Sharing Agreement that the parties will enter into as part of the Public/Private Partnership. In addition, we establish a license term for the D Block license. Finally, we provide that this licensee will have the exclusive right and obligation to build out the shared network using the 700 MHz public safety broadband spectrum, except in very limited situations.

400. Second, we provide several safeguards relating to the 700 MHz Public/Private Partnership. These safeguards include certain procedural rules regarding how the NSA will be negotiated and executed. Thus, we require that the NSA be approved by the Commission and executed by the parties as a pre-condition of the grant of the D Block license to the winning bidder. We also impose certain obligations regarding timeframes for the negotiation process. We further establish that, if a negotiation dispute must be brought to the Commission, the Commission may choose from a number of alternative measures, at its option, to address the dispute, including issuing a decision resolving outstanding issues or possibly reauctioning the D Block license.

401. In addition, to support continued construction and operation of the shared wireless broadband network and to address contingencies that might result in the event that the D Block licensee or any related entities suffer financial problems, or defaults on its obligations, we impose a number of measures to ensure implementation of the network and the prevention of any interruption in ongoing network services on which public safety users are depending. Given the critical public interest goal of providing 700 MHz broadband network service to the nation's local and state public safety entities, these measures include establishing requirements relating to the organization and structure of the 700 MHz Public/Private Partnership that should reduce the risk that the D Block license or network assets will be drawn into bankruptcy. To guard against discontinuance of operations, we prohibit this licensee or any related entities from discontinuing or degrading service to public safety users absent Commission approval. We also require that the Public Safety Broadband Licensee be granted an assignable right to purchase the assets of the network in the event the D Block license is cancelled or terminated, by reason of default or for any other reason, and a right of first refusal to purchase the network assets if and whenever such assets are otherwise to be sold. In the event the D Block license is cancelled and the spectrum is awarded to a new licensee, we provide that the Public Safety Broadband Licensee's right to purchase will be assigned to the new D Block licensee.

402. Third, we address the remaining issues relating to the D Block license. Specifically, we conclude that although partitioning or disaggregation of the license will not be permitted, we will permit assignment or transfer of the license provided that the Commission is satisfied that this would be in the public interest. We also address other issues relating to the commercial services offered by the D Block licensee under the license authorization. In particular, we decline to adopt the wholesale/open access proposals for this license, or impose special roaming requirements for application to this particular license. Finally, we clarify that we will require the D Block licensee to meet regulatory obligations such as E911 and CALEA to the same extent as providers in other commercial spectrum.

2. Essential Components of Public/Private Partnership

a. Shared Wireless Broadband Network

403. Background. In its original filings on which we sought comment in the *700 MHz Further Notice*, Frontline proposed that the shared broadband network should satisfy certain general requirements,